



US009636082B2

(12) **United States Patent**
Field

(10) **Patent No.:** **US 9,636,082 B2**

(45) **Date of Patent:** ***May 2, 2017**

(54) **MEDICAL-SURGICAL DEVICES**

(71) Applicant: **The Cooper Companies Global Holdings LP**, St. Michael (BB)

(72) Inventor: **Stephen James Field**, Kent (GB)

(73) Assignee: **The Cooper Companies Global Holdings LP**, St. Michael (BB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 735 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/685,865**

(22) Filed: **Nov. 27, 2012**

(65) **Prior Publication Data**

US 2013/0085384 A1 Apr. 4, 2013

Related U.S. Application Data

(63) Continuation of application No. 13/064,382, filed on Mar. 22, 2011, which is a continuation of application (Continued)

(51) **Int. Cl.**
A61B 8/08 (2006.01)
A61B 17/435 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **A61B 8/0841** (2013.01); **A61B 8/00** (2013.01); **A61B 8/14** (2013.01); **A61B 17/435** (2013.01);
(Continued)

(58) **Field of Classification Search**

CPC **A61B 8/0841**; **A61B 8/14**; **A61B 8/00**;
A61B 17/435; **A61B 2090/3925**;
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,702,034 A 2/1955 Walter
2,740,192 A 4/1956 Ogle
(Continued)

FOREIGN PATENT DOCUMENTS

DE 38 33 365 4/1989 **A61M 25/098**
DE 3936162 6/1991
(Continued)

OTHER PUBLICATIONS

Coloreu, B. et al., "Embryo transfer under ultrasound guidance improves pregnancy rates after in-vitro fertilization", *Human Reproduction*, vol. 15, No. 3, pp. 616-620 (2000).

(Continued)

Primary Examiner — Katherine M Shi

Assistant Examiner — Michael Mendoza

(74) *Attorney, Agent, or Firm* — Fish & Richardson P.C.

(57) **ABSTRACT**

An embryo replacement catheter has a flexible extruded shaft of a transparent polyurethane with a bore extending along its length. Gas bubbles of a diameter in the range 5 .mu. to 10 .mu. are incorporated into the thickness of the wall of the shaft by adding gas during extrusion. The bubbles are selected to increase the visibility of the catheter under ultrasound imaging while still enabling material flowing along the catheter to be seen. The inventive catheter is not confined to embryo replacement catheters.

30 Claims, 1 Drawing Sheet

